CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.10/NMS/CSR-09/134b/CEMENT/2016-17 Date: 06.09.2016

TEST REPORT ON CEMENT

* CUSTOMER	:	**Asst. Executive Engineer**, Vidyaranyapura Sub Division, BBMP, Bangalore.
*AGENCY	:	**Mr. N.M. Shivakumar,** #7, 2nd Block, Juganahalli, Rajajinagar, Bangalore.
*NAME OF THE WORK	:	Improvements to Roads and Drains near Apoorva Appartments and surroundings Roads Ward No.10, Vidyaranyapura Sub Division, BBMP, Bangalore.
*REFERENCE	:	AEE/BBMP/VSD/PR/229/2016-17 Dated: 02.09.2016
SAMPLE ID	:	Cement
SAMPLE RECEIVED ON	:	02.09.2016
PERIOD OF TESTING	:	02.09.2016 to 06.09.2016

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988(RA-2009)	28.50 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988(RA-2009)	140 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988(RA-2009)	485 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988(RA-2009)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

AE-D AEE (VRP) BD

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T-2377

Job No.: CTCE/BBMP/W.No.10/NMS/CSR-09/134b/SAND-Gradation/2016-17 : 06.09.2016

TEST REPORT ON DETERMINATION GRADATION OF FINE AGGREGATES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. N.M. Shivakumar,**
#7, 2nd Block, Juganahalli, Rajajinagar, Bangalore.

*** Name of Work** : Improvements to Roads and Drains near Apoorva Appartments and surroundings Roads Ward No.10, Vidyaranyapura Sub Division, BBMP, Bangalore.

Reference : AEE/BBMP/VSD/PR/229/2016-17 Dated: 02.09.2016

Technical Reference : IS : 2386 Part 1 - 1963 RA-2007

Sample ID : Fine Aggregates

Sample Received on : 02.09.2016

Date of Testing : 06.09.2016

Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	92.20	90-100	90-100	90-100	95-100
2.36	73.60	60-95	75-100	85-100	95-100
1.18	52.10	30-70	55-90	75-100	90-100
600 Micron	24.30	15-34	35-59	60-79	80-100
300 Micron	11.70	5-20	8-30	12-40	15-50
150 Micron	6.20	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

AEE VERIFIED

Remarks : This sample is under Zone-I specific limits.

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T-2377

Job No.: CTCE/BBMP/W.No.10/NMS/CSR-09/134b/AGG/GR/2016-17 : 06.09.2016

TEST REPORT ON DETERMINATION GRADATION OF COARSE AGGREGATES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. N.M. Shivakumar,**
#7, 2nd Block, Juganahalli, Rajajinagar, Bangalore.

*** Name of Work** : Improvements to Roads and Drains near Apoorva Appartments and surroundings Roads Ward No.10, Vidyaranyapura Sub Division, BBMP, Bangalore.

Reference : AEE/BBMP/VSD/PR/229/2016-17 Dated: 02.09.2016

Technical Reference : IS : 2386 Part 1 -1963 RA-2007

Sample ID : Coarse Aggregates (40mm)

Sample Received on : 02.09.2016

Date of Testing : 06.09.2016

Total Wt. of Aggregates in gms= **5000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	98.40	95-100	85-100
20	38.70	30-70	0-20
10	17.80	10-35	0-5
4.75	3.90	0-5	-

AEE (VRP) SD

* Information is furnished by the Customer/Representative

Remarks : This sample is under Graded specific limits.

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Job No.: CTCE/BBMP/W.No.10/NMS/STEEL/2016-17 13.09.2016

TEST REPORT ON REINFORCEMENT STEEL

Customer	:	**Asst. Executive Engineer**, Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	:	**Mr. N.M. Shivakumar,** #7, 2nd Block, Juganahalli, Rajajinagar, Bangalore.
Name of the work	:	Improvements to Roads and Drains near Apoorva Appartments and surroundings Roads Ward No.10, Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	:	AEE/BBMP/VSD/PR/229/2016-17 Dated: 02.09.2016
Date of Test	:	13.09.2016
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm²	Tensile strength (Ultimate stress) N/mm²	Elongation percent gauge length		
1	12	0.89	515	558	13.40	O.K	O.K

AEE (NRP) SD

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JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.10/NMS/STEEL/2016-17 13.09.2016

TEST REPORT ON REINFORCEMENT STEEL

Customer	:	**Asst. Executive Engineer**, Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	:	**Mr. N.M. Shivakumar,** #7, 2nd Block, Juganahalli, Rajajinagar, Bangalore.
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Reference	:	AEE/BBMP/VSD/PR/229/2016-17 Dated: 02.09.2016
Date of Test	:	13.09.2016
Technical Reference	:	IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm²	Tensile strength (Ultimate stress) N/mm²	Elongation percent gauge length		
1	16	1.58	520	563	13.65	O.K	O.K

AEE (VRP) BD

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T-2377

Job No.: CTCE/BBMP/W.No.10/NMS/CSR-09/134b/CUBE/2016-17 13.10.2016

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. N.M. Shivakumar,**
#7, 2nd Block, Juganahalli, Rajajinagar, Bangalore.

*** Name of the work** : Improvements to Roads and Drains near Apoorva Appartments and surroundings Roads Ward No.10, Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Reference** : AEE/BBMP/VSD/PR/229/2016-17 Dated: 02.09.2016

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{15}

Compressive Strength as on : 28th day

Sample Received on : 13.10.2016

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	15.09.2016	13.10.2016	8.120	365.3	16.24
2	15.09.2016	13.10.2016	8.235	375.6	16.69
3	15.09.2016	13.10.2016	8.310	398.6	17.72

AEE (VRP) SD

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Job No.: CTCE/BBMP/W.No.10/NMS/CSR-09/134b/CUBE/2016-17 17.10.2016

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. N.M. Shivakumar,**
#7, 2nd Block, Juganahalli, Rajajinagar, Bangalore.

*** Name of the work** : Improvements to Roads and Drains near Apoorva Appartments and surroundings Roads Ward No.10, Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Reference** : AEE/BBMP/VSD/PR/229/2016-17 Dated: 02.09.2016

*** Sample ID** : Culvert Deck Slab Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{20}

Compressive Strength as on : 28th day

Sample Received on : 17.10.2016

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	19.09.2016	17.10.2016	8.102	478.3	21.26
2	19.09.2016	17.10.2016	8.238	493.6	21.94
3	19.09.2016	17.10.2016	8.310	510.2	22.68

AEE (YRP) SD

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Civil Tech Consultants & Engineers Bangalore

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Job No.: CTCE/BBMP/W.No.10/NMS/CSR-09/134b/CUBE/2016-17 24.10.2016

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. N.M. Shivakumar,**
#7, 2nd Block, Juganahalli, Rajajinagar, Bangalore.

*** Name of the work** : Improvements to Roads and Drains near Apoorva Appartments and surroundings Roads Ward No.10, Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Reference** : AEE/BBMP/VSD/PR/229/2016-17 Dated: 02.09.2016

*** Sample ID** : Road Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{20}

Compressive Strength as on : 28th day

Sample Received on : 24.10.2016

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	26.09.2016	24.10.2016	8.128	485.5	21.58
2	26.09.2016	24.10.2016	8.239	492.3	21.88
3	26.09.2016	24.10.2016	8.315	516.3	22.95

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Job No.: CTCE/BBMP/W.No.10/NMS/CSR-09/134b/CUBE/2016-17 24.10.2016

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	: **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
* Agency	: **Mr. N.M. Shivakumar,** #7, 2nd Block, Juganahalli, Rajajinagar, Bangalore.
* Name of the work	: Improvements to Roads and Drains near Apoorva Appartments and surroundings Roads Ward No.10, Vidyaranyapura Sub Division, BBMP, Bangalore.
* Reference	: AEE/BBMP/VSD/PR/229/2016-17 Dated: 02.09.2016
* Sample ID	: Road Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
* Grade of Concrete	: M_{20}
Compressive Strength as on	: 28th day
Sample Received on	: 24.10.2016

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	26.09.2016	24.10.2016	8.098	475.5	21.13
2	26.09.2016	24.10.2016	8.190	492.3	21.88
3	26.09.2016	24.10.2016	8.228	510.3	22.68

AEE (WRP) VSD

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Job No.: CTCE/BBMP/W.No.10/NMS/CSR-09/134b/CUBE/2016-17 26.10.2016

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. N.M. Shivakumar,**
#7, 2nd Block, Juganahalli, Rajajinagar, Bangalore.

*** Name of the work** : Improvements to Roads and Drains near Apoorva Appartments and surroundings Roads Ward No.10, Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Reference** : AEE/BBMP/VSD/PR/229/2016-17 Dated: 02.09.2016

*** Sample ID** : Road Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{20}

Compressive Strength as on : 28th day

Sample Received on : 26.10.2016

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	28.09.2016	26.10.2016	8.189	485.5	21.58
2	28.09.2016	26.10.2016	8.238	493.5	21.93
3	28.09.2016	26.10.2016	8.315	513.2	22.81

AEE (VRP) SD

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Job No.: CTCE/BBMP/W.No.10/NMS/CSR-09/134b/CUBE/2016-17 26.10.2016

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

*** Agency** : **Mr. N.M. Shivakumar,**
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*** Name of the work** : Improvements to Roads and Drains near Apoorva Appartments and surroundings Roads Ward No.10, Vidyaranyapura Sub Division, BBMP. Bangalore.

*** Reference** : AEE/BBMP/VSD/PR/229/2016-17 Dated: 02.09.2016

*** Sample ID** : Road Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{20}

Compressive Strength as on : 28th day

Sample Received on : 26.10.2016

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	28.09.2016	26.10.2016	8.215	478.3	21.26
2	28.09.2016	26.10.2016	8.318	493.5	21.93
3	28.09.2016	26.10.2016	8.403	513.3	22.81

AEE (VRP) SD

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